CAVITY NESTERS

Hairy Woodpecker (*Picoides villosus*)

The hairy woodpecker is a fairly common, permanent resident of mixed-conifer and riparian deciduous habitats at elevations up to 9,500 feet (Bent 1939). The whole of temperate North America is occupied by one or another of its various subspecies (Beal 1911).

This species uses stands of large mature trees and snags. The hairy woodpecker uses relatively open or patchy stands of conifers with abundant snags (Shackelford and Conner 1997). In the Blue Mountains of Oregon and Washington, Thomas (1979) estimated that 446 snags per 100 ha (180 per 100 ac) of 25 cm (10 in) dbh minimum would support maximum populations. The hairy woodpecker exhibits defense of the nest (Dawson 1923), and intraspecific defense of feeding sites (Bendire 1895).

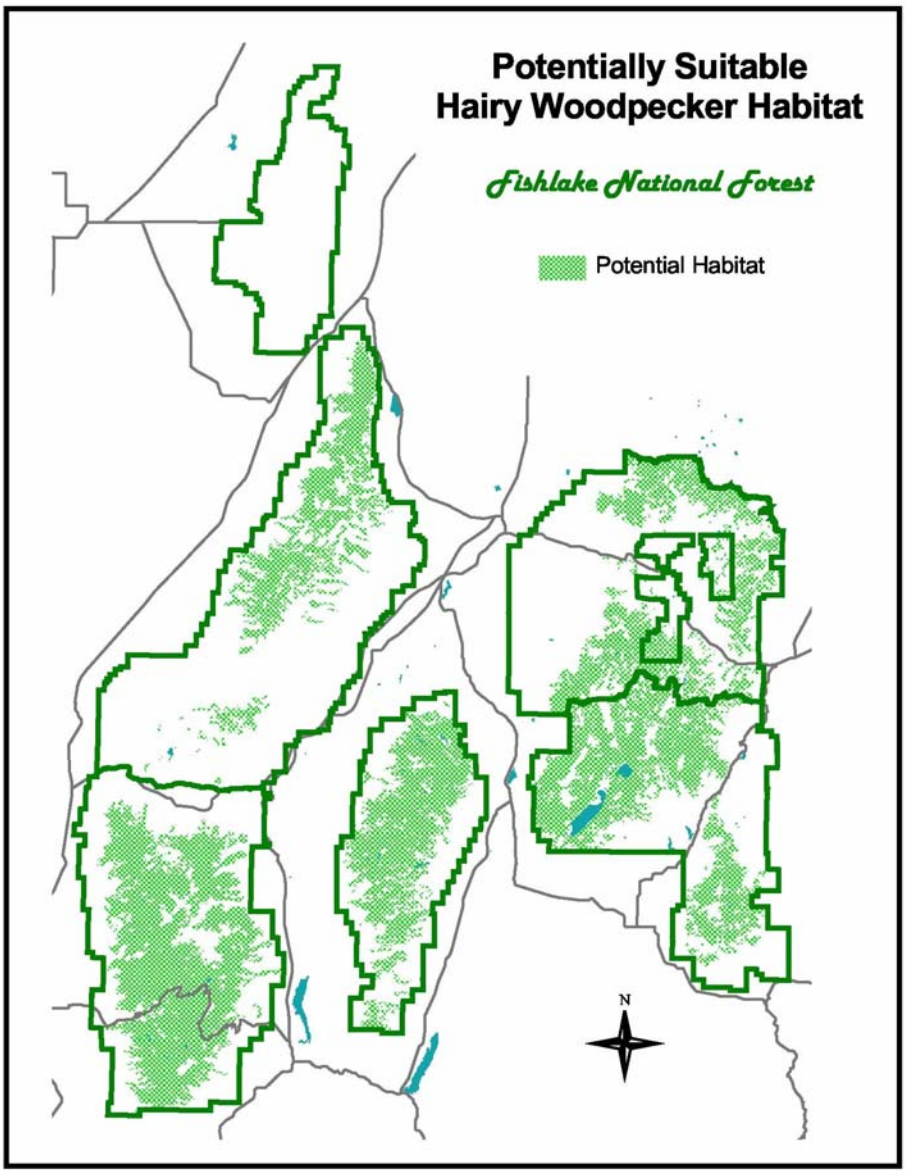
The hairy woodpecker excavates a nest cavity from 3-55 feet above ground in the soft interior of a snag or dead branch (Raphael and White 1984) of aspen, sycamore, pine, or other tree species (Baicich and Harrison 1997, Bendire 1895, Bent 1939). Nest tree diameter (dbh) averaged 32.3 cm (about 12.5 in) in Wyoming (Loose and Anderson 1995). The hairy woodpecker begins breeding from late March to late May (Baicich and Harrison 1997). The male drums on dry, resonant limbs to attract the female (Bendire 1895). Average clutch is 4 eggs, though the range is 3-5. They have one brood per year. Both the male and female dig a cavity, incubate the eggs about two weeks, and care for altricial young (Bendire 1895). Young leave the nest at 28-30 days (Baicich and Harrison 1997). A pair may remain together for several years (Willard 1918, Carpenter 1919).

Most of the hairy woodpecker's food comes from trees (Beal 1911). The food consists of larvae, beetles, spiders, flies, ants, and in the winter, seed, grains, nuts, and acorns (Bendire 1895).

Approximately 80% of this species' annual diet is animal matter, mainly wood borers, but including beetles, ants, caterpillars, spiders, millipedes, aphids, and other larvae (Beal 1911, Dawson 1923). They also eat mast (acorns, hazelnuts, beechnuts), berries, seeds and cambium (Beal 1911, Bent 1939). It often congregates to feed in insect-infested or burned areas (Koplin 1969). The hairy woodpecker frequents riparian habitats year-round (Anthony et al. 1996).

Interspecific competition for food between hairy woodpeckers and other birds, including those of their own species, is apparently reduced by feeding on different species of tree, or in different locations in same tree. Most foraging takes place on the trunk of the tree (Kisiel 1972, Kilham 1965). Hairy woodpeckers may be important in reducing populations of adult and larval bark beetles (Bendire 1895, Otvos 1979).

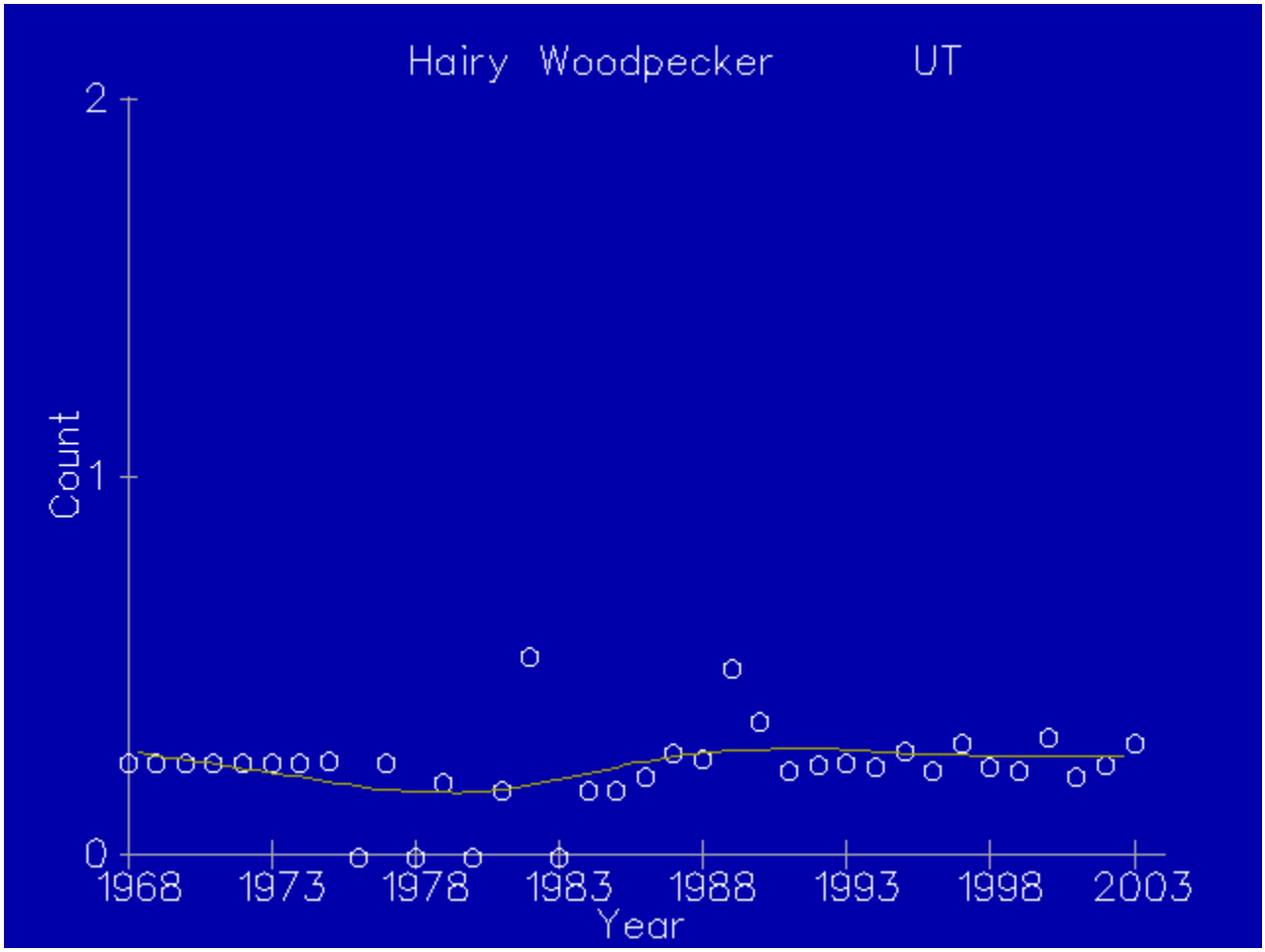
On the Fishlake National Forest, the hairy woodpecker occurs on all four Ranger Districts. This species is wide-ranging and easily detectable. Below is a map that displays potentially suitable habitat across the forest. This area totals approximately 423,432 acres.



Trend

On the Fishlake National Forest, woodpecker surveys have been conducted in forest cover types prior to vegetation treatments. Formal forest-wide inventories outside of proposed project areas have been conducted on the Richfield, Loa, and Beaver Ranger Districts. As a result of these inventories, the nests of several woodpecker species have been located on Monroe Mountain, including those of the hairy woodpecker. These monitoring efforts were in conjunction with a study conducted by a graduate student attending Brigham Young University.

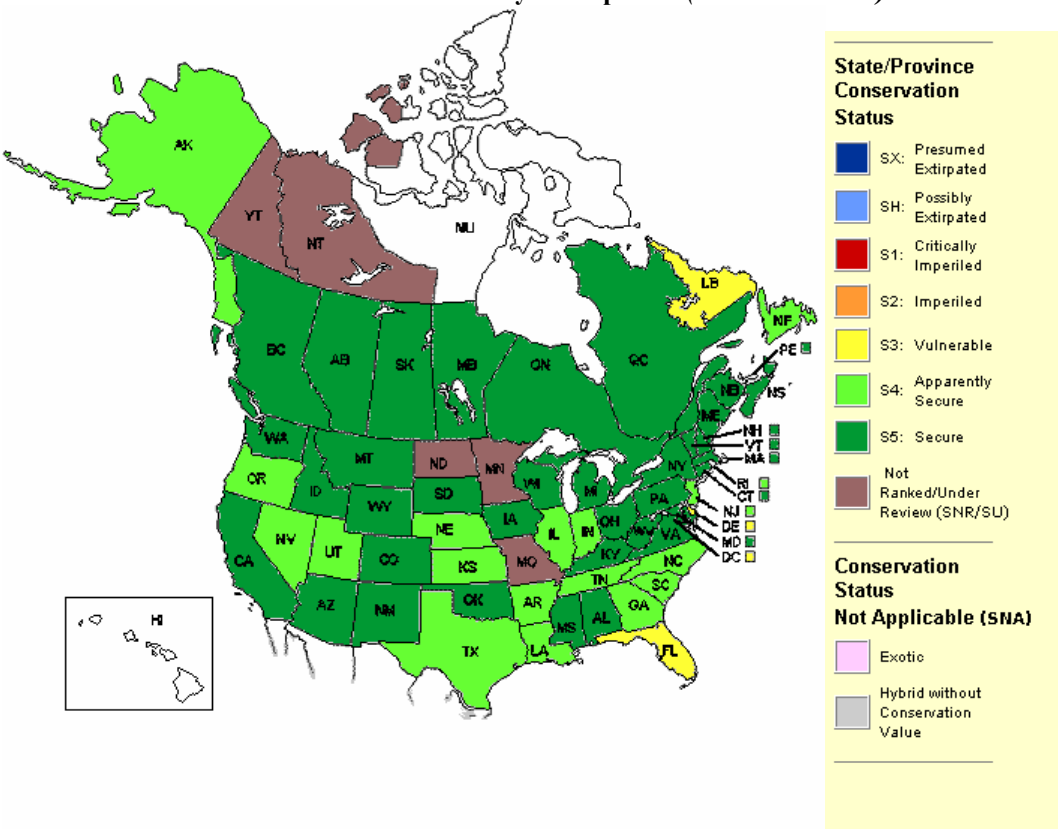
In addition to these data, the BBS database (www.mbr-pwrc.usgs.gov) displays a stable trend of hairy woodpeckers in Utah. These data represent a 35-year trend between 1968 and 2003. These data were collected throughout the entire state of Utah, including points on the Fishlake National Forest.



Surveys for avian MIS have been conducted on the Fishlake National Forest since the mid 1980's. Additional studies by "expert birders" were conducted in 1994, 1998, 2002, 2003, and 2004. These surveys have targeted cavity nesting species, riparian species, and sage nesting species. All other avian species were also recorded while conducting survey routes. In addition to these data, Utah State University has collected data across the forest in aspen/conifer habitat types. Cavity nesting bird species were the focus of these efforts. These data were collected between 2001 and 2002.

The map below displays the status ranking from the Nature Conservancy database (NatureServe Explorer). The Hairy Woodpecker in Utah has been ranked as "apparently secure".

Hairy Woodpecker *(Picoides villosus)*



NatureServe. 2005. NatureServe Explorer: An online encyclopedia of life [web application]. Version 4.2. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: February 18, 2005).

Data collection specific to cavity nesters has been collected on the forest between 1994-2004. In 1994 there were no observations of Hairy woodpeckers along transect lines in the Burnt Flat area. In 1998, the number of presence/absence observations of this species along each transect line totaled 4. In 2001 a Utah State University cavity nesting study located 13 transects with birds present. In 2002 a total of 8 transects supported hairy woodpeckers across the forest. In 2004 a total of 7 transect lines supported Hairy woodpeckers. Although these numbers are similar to previous years detections, the 7 detections would likely have been high if all transect lines monitored in 2002, and 2003 were monitored in 2004. Further data is being collected to fine-tune the status of the population on the Fishlake National Forest. Considering all the data presented in this document, and my professional interpretation of these data, this population is stable, and viable across the forest.

Western Bluebird (*Sialia mexicana*)

The western bluebird prefers open woodlands and pastures where old trees provide nest sites (Udvardy 1994). The western bluebird is most abundant in open ponderosa pine forests of the Transition Zone, but may also be found in oak woodlands, pinyon-juniper, mixed-conifer, and subalpine forests (Scott et al. 1977, Gaines 1977). They breed from southern British Columbia south to Baja and east, throughout

the mountains of the West to New Mexico and Texas. It winters over most of the breeding range, though populations in the north may move southward (Udvardy 1994).

The rusty breast, which both the male and female exhibit, can be used to identify the western bluebird. The male is deep blue on the head and upperparts, while the female is sooty gray above, and has bluish wings and tail. Both sexes have white underparts (Udvardy 1994).

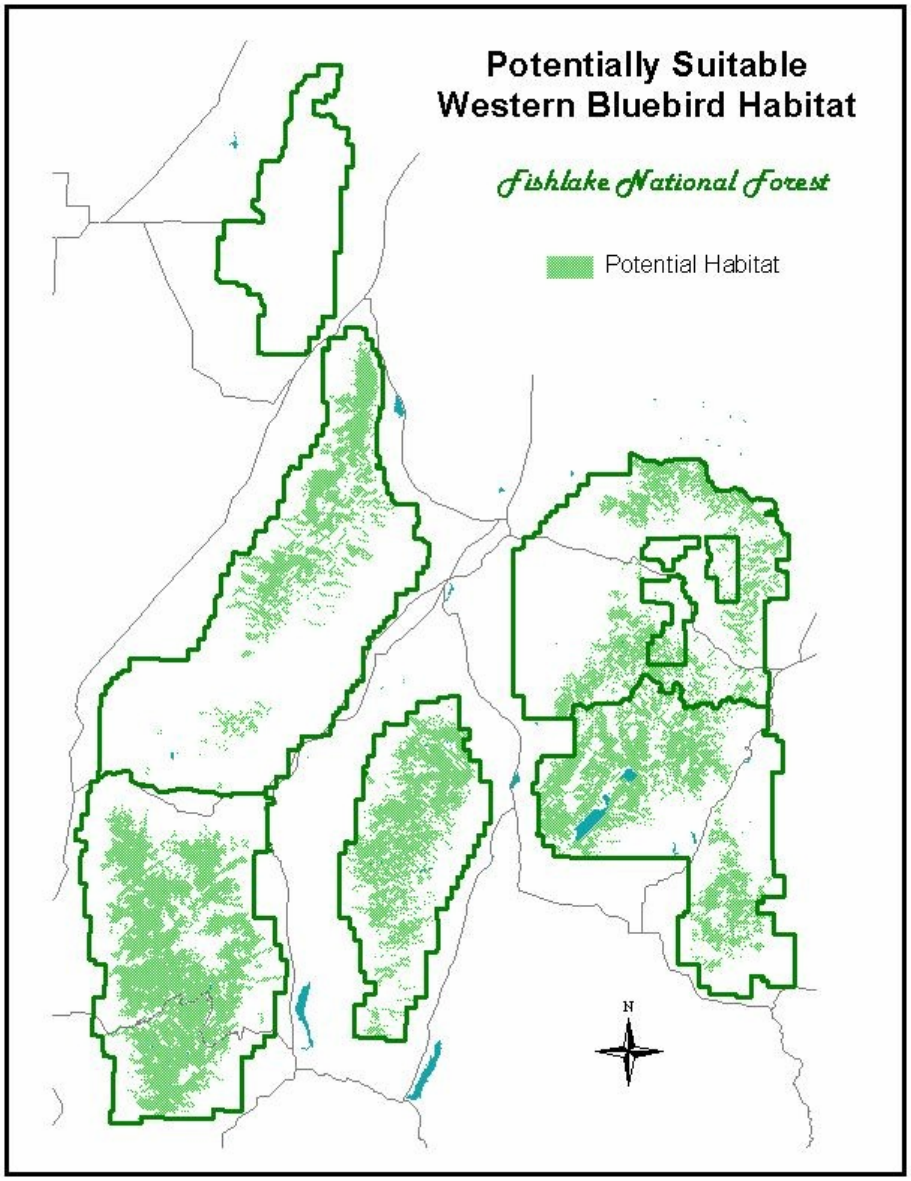
This species requires nest cavities, low perches to hunt from, and insect prey at lower understory and ground levels (Germaine and Germaine 2002). It can be found in open country (Jewett et al. 1953). Availability of snags frequently limits population density (Ross 1933, Ehrlich et al. 1988). In the Yosemite Sierra, small flocks move upslope in late summer and fall to feed on mistletoe berries (Gaines 1977). Breeding density in a ponderosa pine study area in Arizona was 15 pairs per 100 acres (Haldeman et al. 1973). Anderson (1970) reported a wintering population of 8-20 birds per 100 acres in an Oregon white oak forest.

The western bluebird usually nests in old woodpecker holes or natural cavities, in oak, sycamore, and pine tress. It has been known to also use other cavity or nest boxes (Scott et al. 1977). It occasionally uses nests of cliff swallows or other species (Bent 1949). Nests are usually 5-40 feet above ground (Baicich and Harrison 1997). The western bluebird breeds from early April into May (Harrison 1978). Clutch size was 4-5 in a northern Arizona study from 1998-2000 (Germaine and Germaine 2002). Incubation lasts 12 days. Both parents tend altricial young. This species is frequently double-brooded. The male may tend fledglings while the female re-nests (Harrison 1978).

The western bluebird primarily eats insects, including grasshoppers, moths, caterpillars, beetles, and ants; it also eats earthworms, snails, and other small arthropods (Gander 1960, Bent 1949). It flies out from a low perch to capture prey on the ground or herbage; it sometimes hovers before pouncing. The western bluebird also hawks aerial insects (Bent 1949). It perches on a low branch of a tree or shrub, fence, or tall herb, often adjacent to a medium to large opening in a wooded or brushy habitat (Gander 1960). In nonbreeding season, this species supplements its diet with berries of mistletoe, poison oak, elderberry, and other species (Bent 1949). The presence of mistletoe berries may govern local occurrence in winter (Grinnell and Miller 1944). The western bluebird has been observed to drink water frequently (Smyth and Coulombe 1971, Gander 1960).

Competition from European starlings and house sparrows has reduced eastern bluebird populations in parts of the eastern U.S., and threatens western bluebirds. Western bluebirds also compete for nest sites with violet-green swallows, house wrens, and other native species; generally they are more capable of defending their nest against native species (Bent 1949). Competition with woodpeckers for nest sites may be strong (Miller and Bock 1972). Western bluebirds are also threatened by predation by snakes, small corvids, and ground squirrels (Germaine and Germaine 2002).

On the Fishlake National Forest, the western bluebird occurs on all four Ranger Districts. This species is wide-ranging and easily detectable. Below is a map that displays potentially suitable habitat across the forest. This area totals approximately 423,432 acres.


Potentially Suitable
Western Bluebird Habitat
Fishlake National Forest
Potential Habitat
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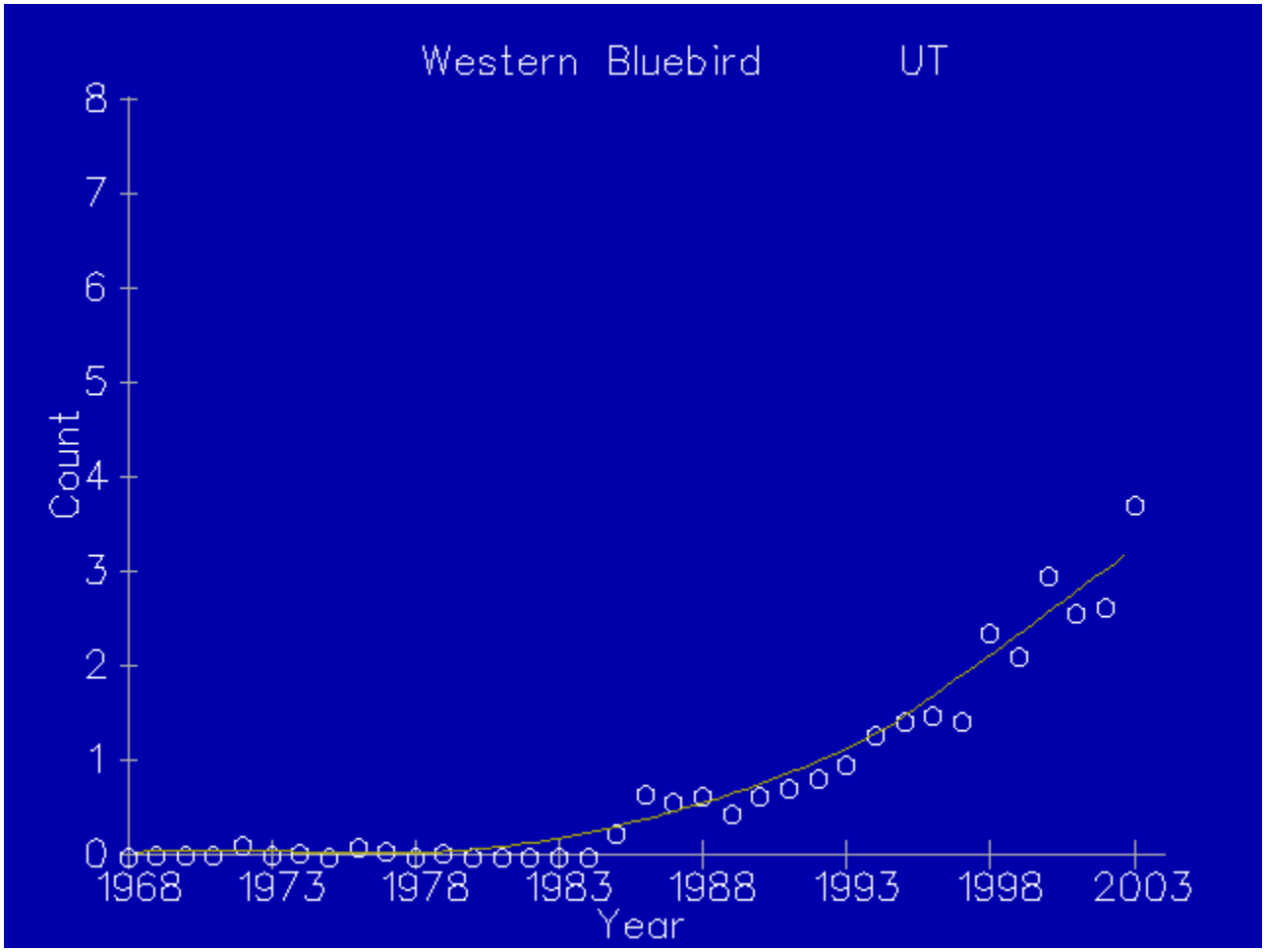
Trend

In addition to these data, the BBS database (www.mbr-pwrc.usgs.gov) displays an upward trend of western bluebirds in Utah. These data represent a 35-year trend between 1968 and 2003. These data were collected throughout the entire state of Utah, including points on the Fishlake National Forest.



Surveys for avian MIS have been conducted on the Fishlake National Forest since the mid 1980's. Additional studies by "expert birders" were conducted in 1994, 1998, 2002, 2003, and 2004. These surveys have targeted cavity-nesting species, riparian species, and sage-nesting species. All other avian species were recorded while conducting survey routes. In addition to these data, collection efforts by Utah State University have collected data across the forest in aspen/conifer habitat types. Cavity nesting bird species were the focus of these efforts. These data were collected between 2001 and 2002.

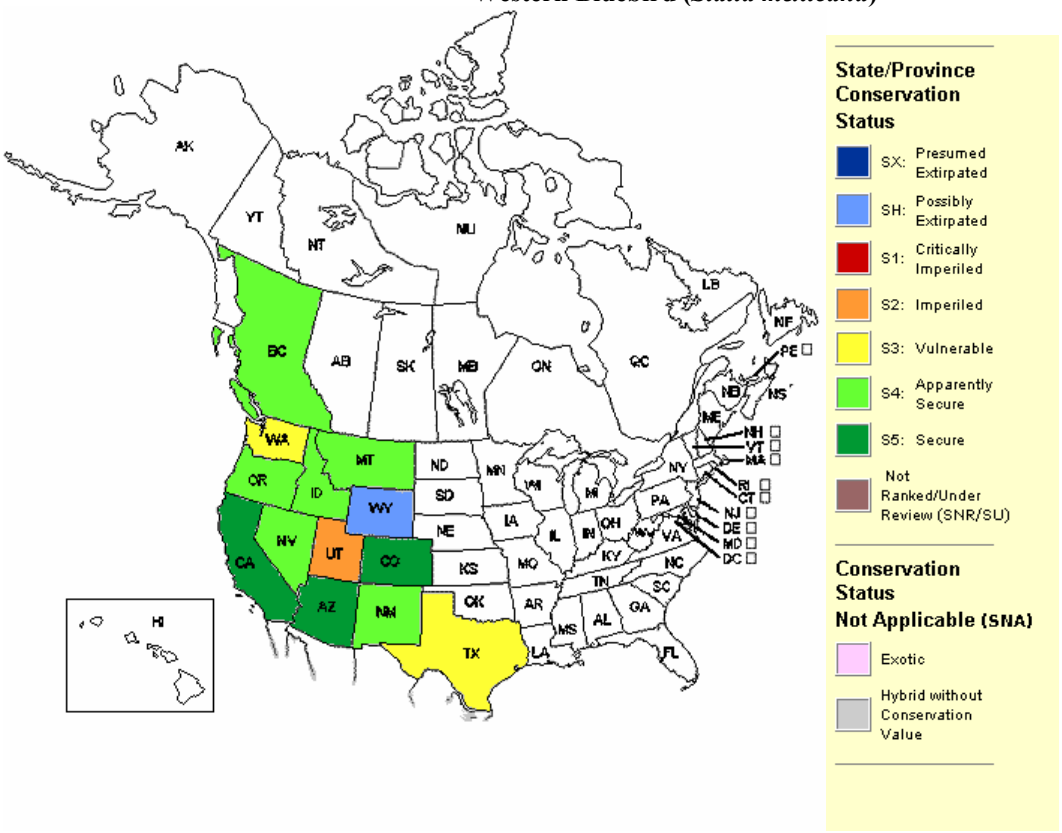
In 1994 and 1998, surveys were conducted in the Burnt Flat area, and other areas of the forest. No birds were encountered in the Burnt Flat area. However, in 2001 this species was detected by Utah State University along 3 transect lines while conducting specific cavity nesting surveys. In 2002 the presence of bluebirds were detected along 1 transect line. The number of detections increased to 14 in 2003. In 2004 only 7 transects were visited across the entire forest due to limited resources. As a result of these limited efforts there were no detections of Western bluebirds.

As a result of the data presented in this document, few locations have been monitored and additional monitoring sites should be in 2005. Data collected by the BBS indicate a significant population increase staring in about 1985. Data presented by the Nature Conservancy however demonstrate an "imperiled" population in Utah. Considering all of the data presented in this document, as well as my professional

interpretation of these data, this population is stable and viable across the forest; however, additional monitoring efforts are needed to continue to evaluate the trend and viability of this species.

The map below displays the status ranking from the Nature Conservancy database (NatureServe Explorer). The Western bluebird in Utah has been ranked as "imperiled".

Western Bluebird (*Sialia mexicana*)



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Mountain Bluebird (*Sialia currucoides*)

The mountain bluebird is differentiated from the western bluebird by the lack of red on the breast. Males are pure sky blue above and lighter below. The females are similar, though duller and grayer (Udvardy 1994). The bluebird nests in nearly all timber types of the Rocky Mountain region, and is usually found between 7,000-11,000 feet in open forests or edges (Scott et al. 1977, Bent 1949).

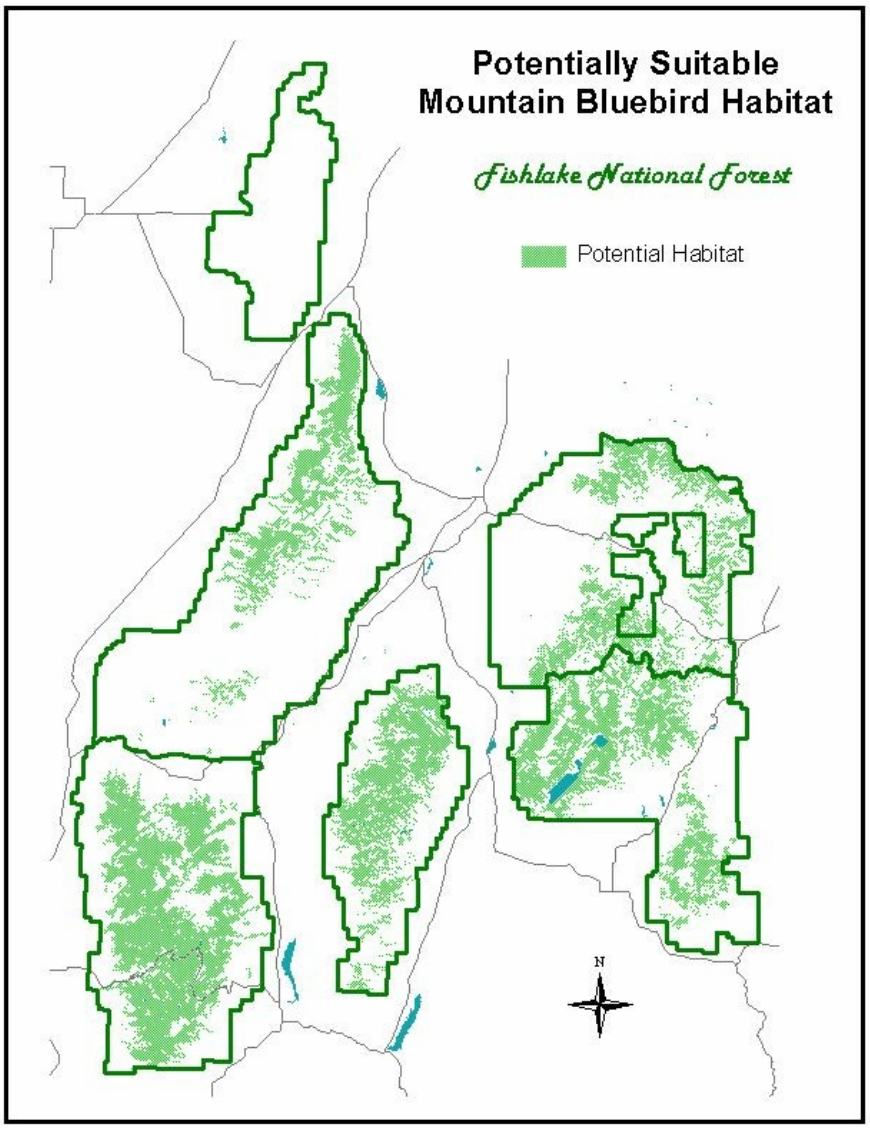
This species prefers open terrain (Jewett et al. 1953) with an occasional tree, rock, fence post, power line, or similar perches (Power 1966). It requires suitable cavities for roosting and nesting, usually in a snag or dead portion of tree. In winter, this species occurs in virtually any open or sparsely wooded habitat (Bent 1949). The mountain bluebird usually moves southward for the winter (Jewett et al. 1953). Most males returned to Washington territories in early April, and the females about two weeks later (Power 1966). Estimates of breeding density include 30 birds per 100 acres in Wyoming aspen forest (Salt 1957) and 15.2 pairs per 100 acres in a Sierra Nevada conifer forest (Bock and Lynch 1970). At Mt. Rainier, Washington, Jewett et al. (1953) reported that a nesting female foraged over about 6.5 acres.

The mountain bluebird builds a nest in a natural cavity or woodpecker hole in a snag or dead portion of a tree (Gaines 1977). Less frequently it nests in a crevice or cavity in a rock (Gaines 1977, Harrison 1978), building or other human structure; it also uses nest boxes (Jewett et al. 1953, Power 1966) or the nest of a cliff swallow or other species (Baicich and Harrison 1997). In Arizona, nests ranged from 12-35 feet above ground in ponderosa pine snags. These nests were in abandoned woodpecker holes and natural cavities (Scott et al. 1977). The mountain bluebird is monogamous; it lays eggs mid-May to mid-June in Washington. It may be double brood, with each brood clutch containing 5-6 eggs (Power 1966). Incubation is 13-14 days (Power 1966, Harrison 1978), and both sexes care for altricial young (Jewett et al. 1953). Fledging age is 22-23 days (Power 1966).

From a low, exposed perch, the mountain bluebird hovers and stoops on insects on foliage or ground, and hawks flying insects (Power 1966). Beetles and weevils make up a large part of the diet, with grasshoppers, crickets, ants, caterpillars, and bugs being eaten as well (Martin et al. 1961). The bluebird also eats berries and other small fruits (Scott et al. 1977). No bluebird was ever seen drinking fresh water; this need was probably satisfied by animal juices and green plant food (Power 1966).

Tree swallows; house wrens, northern flickers, and rodents compete for nest boxes. Raptors and corvids have been observed to prey upon these bluebirds (Power 1966, Munro 1940).

Potentially suitable mountain bluebird habitat has been mapped across the Fishlake National Forest, and is displayed below. This habitat consists of approximately 423,432 acres of potentially suitable habitat.



Trend

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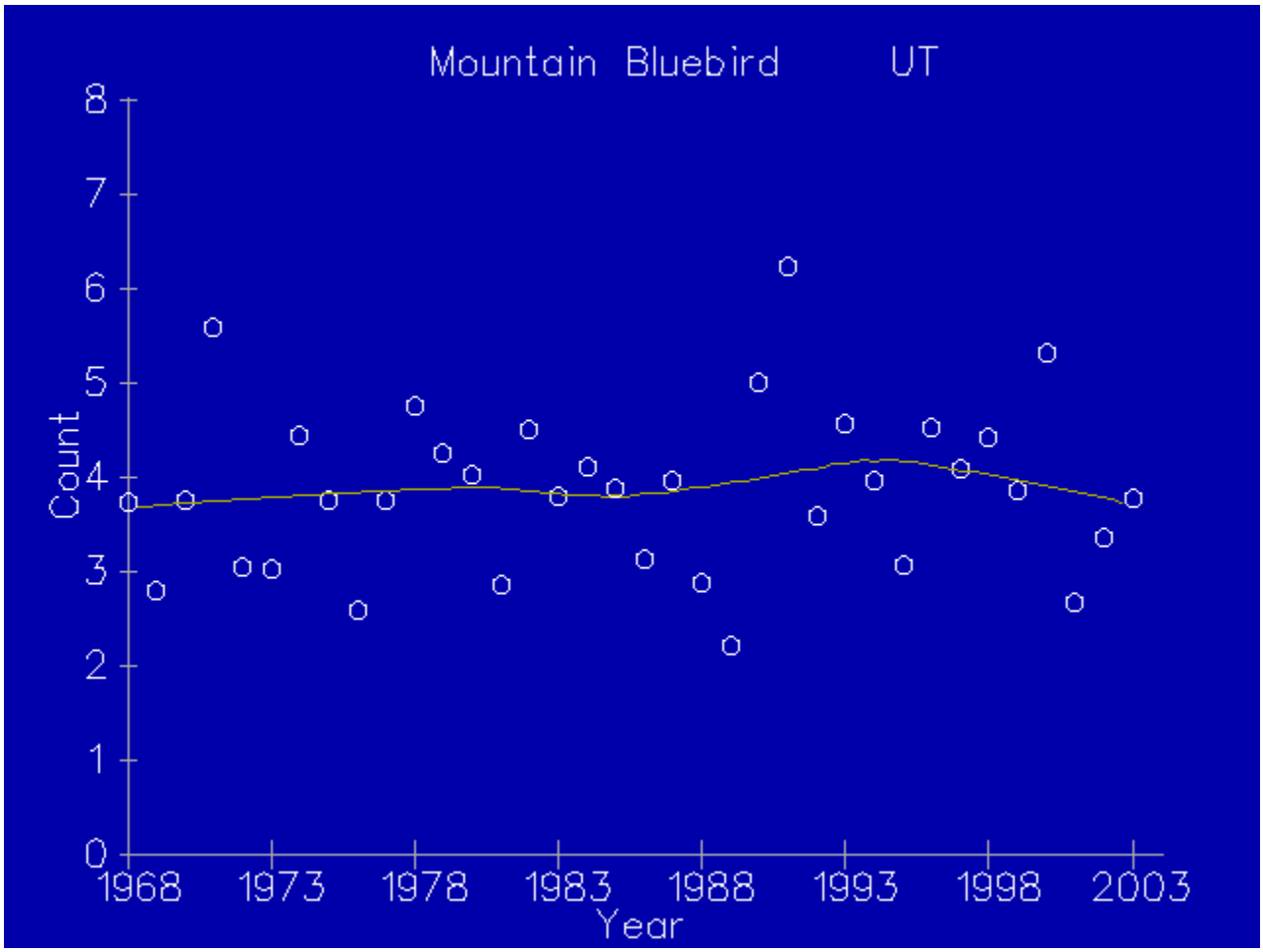

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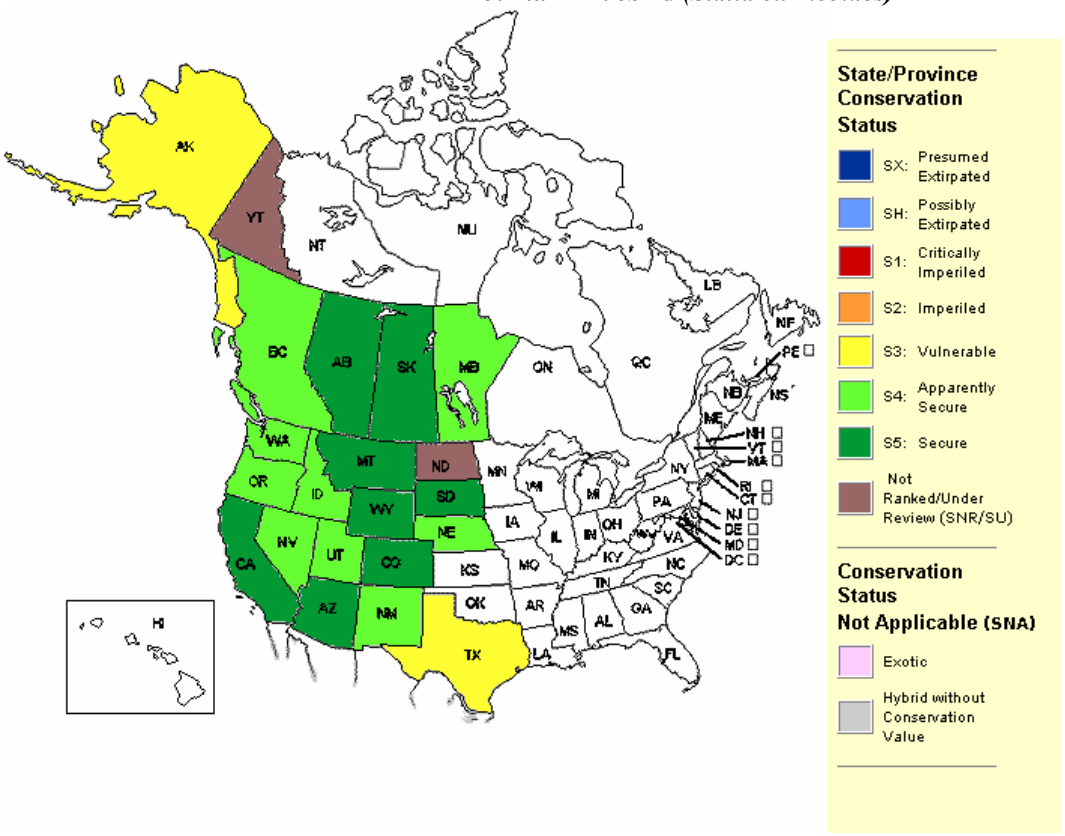
Data has been collected between 1994-2004. In 1994 the number of presence/absence observations of this species along each transect line totaled 24 in the Burnt Flat area. In 1998 a total of 13 transects recorded this species being present, and in 2002 14 transects recorded this species being present. In 2004 39 observations along 4 transects were observed. Data collected in 2004 was limited and not all transects monitored in 2002 and 2003 were revisited in 2004. Further data is being collected to fine-tune the status of the population on the Fishlake National Forest. Additional field surveys will continue to add to the knowledge concerning trend on the Fishlake National Forest.

Additional surveys were conducted in 2001 by Utah State University during a cavity species survey. This species was detected at 13 transects across the forest.

Based on these data and that collected through BBS, and the Nature Conservancy routes, the trend for this species is stable on the forest.

The map below displays the status ranking from the Nature Conservancy database (NatureServe Explorer). The mountain bluebird in Utah has been ranked as "apparently secure".

Mountain Bluebird *(Sialia curricoides)*



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